MAINTENANCE FACILITY
ELECTRICAL UPGRADE
DYERSVILLE, IOWA

IOWA DEPARTMENT OF TRANSPORTATION

UTILITY COORDINATION NOTES

COORDINATE ALL ELECTRIC UTILITY WORK WITH ALLIANT ENERGY

ALLIANT ENERGY CONTACT:
800-255-4268

LOCATE ALL LOCAL UTILITIES IN WORK AREA PRIOR TO STARTING WORK. CONTACT IOWA ONE CALL PRIOR TO DIGGING.

IOWA ONE CALL:
811 or 1-800-292-8989

ELECTRICAL NOTES - GENERAL

ALL WORK SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF THE 2014 NATIONAL ELECTRIC CODE (NEC).

DETERMINE EXISTING CONDITIONS THAT MAY AFFECT THIS WORK, BY ON-SITE INSPECTION PRIOR TO BIDDING.

LABEL CIRCUIT BREAKER NUMBER & PANEL DESIGNATION ON EACH JUNCTION BOX COVER INSTALLED OR ACCESSED AS PART OF THE WORK.

VERIFY POWER REQUIREMENTS AND EXACT LOCATION OF EQUIPMENT FURNISHED. COMPLY WITH ELECTRICAL ROUGH-IN REQUIREMENTS FOR THIS EQUIPMENT.

ALL CIRCUITS SHALL BE IN CONDUIT AND SHALL INCLUDE AN EQUIPMENT GROUNDING CONDUCTOR, GREEN #12 THHN MINIMUM.

ALL CONDUCTORS SHALL BE COPPER THHN, #12 AWG MINIMUM. INCREASE CONDUCTOR SIZES A MINIMUM OF ONE SIZE OVER NEC TABLE 310-16 IN CIRCUITS WITH A LENGTH OVER 75 FEET.

IF EXISTING WIRING IS CALLED OUT TO BE REUSED, INSPECT CONDITION AND CURRENT RATING OF WIRE TO DETERMINE IF IT IS SAFE TO REUSE. REPORT ANY UNSATISFACTORY OR UNSAFE CONDITIONS TO THE ENGINEER.

ELECTRICAL DEMOLITION NOTES

DEMOLITION OF ALL ELECTRICAL DEVICES, CIRCUITS, AND OTHER MISCELLANEOUS MATERIALS IS TO BE BY THE ELECTRICAL CONTRACTOR.

INCLUDE IN REMOVAL OF CIRCUITS: WIRING, BOXES, CONDUITS, STRAPS, AND OTHER MISCELLANEOUS MATERIALS BACK TO THE BRANCH PANEL OR TO A JUNCTION BOX THAT IS TO REMAIN. CIRCUITS THAT TERMINATE IN A JUNCTION BOX MAY BE LEFT FOR FUTURE USE AFTER MARKING AS NOTED BELOW.

CIRCUITS THAT ARE REMOVED, AND NOT REUSED, SHALL BE DISCONNECTED AT THE CIRCUIT BREAKER IN THE EXISTING PANEL. FOLD OVER ENDS OF WIRE, DOUBLE WRAP WITH UL LISTED BLACK VINYL TAPE, AND TAG TO IDENTIFY TO WHICH JUNCTION BOX THE CIRCUIT IS TERMINATED. LABEL UNUSED CIRCUIT BREAKERS AS "SPARE".

REMOVE DEMOLISHED MATERIALS PROMPTLY FROM THE SITE AND DISPOSE OF PROPERLY.

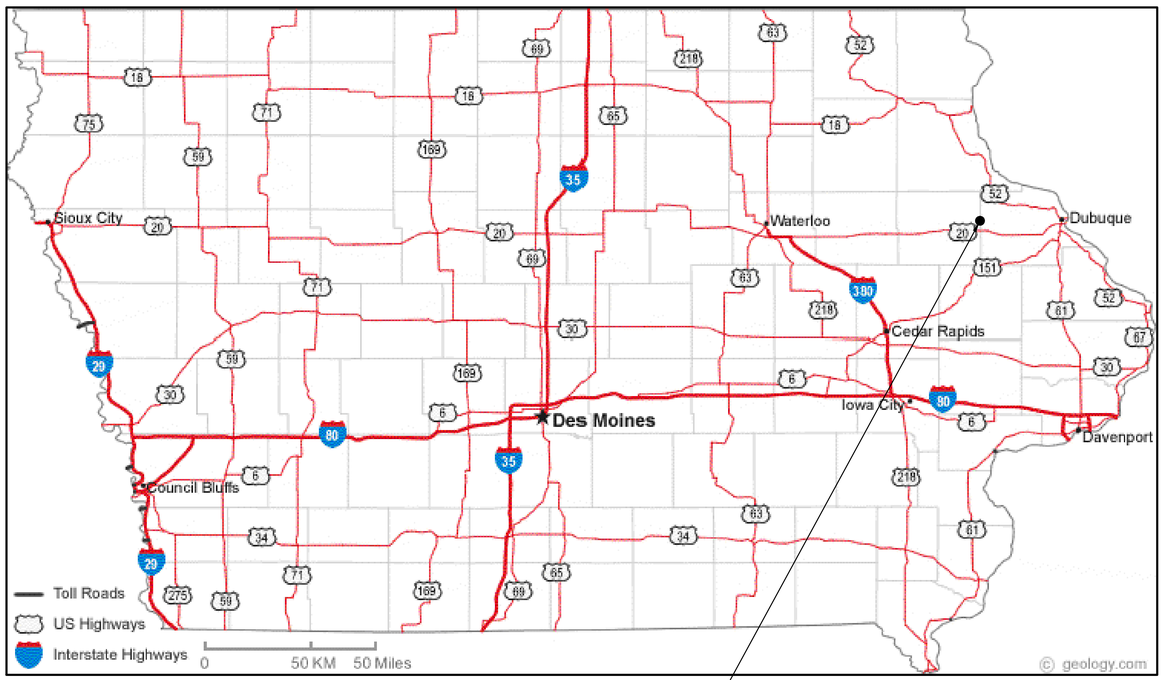
LEAVE OLD CIRCUITS INTACT UNTIL NEW CIRCUITS ARE INSTALLED AND FULLY FUNCTIONAL.

ELECTRICAL SYMBOLS

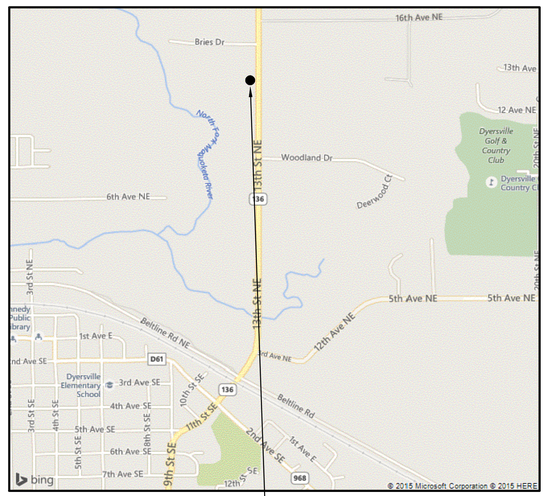
- EXPOSED CONDUIT
  - INDICATES PHASE CONDUCTOR(S)
  - INDICATES NEUTRAL CONDUCTOR
  - INDICATES EQUIPMENT GROUNDING CONDUCTOR
- WALL SWITCH, 1-WAY
- (5) CIRCUIT KEYED NOTE REFERENCE
- (2) KEYED NOTE REFERENCE
- 1 / E2 DETAIL NUMBER REFERENCE / PAGE NUMBER REFERENCE

ABBREVIATIONS

APPROX. - APPROXIMATE
BLDG - BUILDING
CONT. - CONTINUATION
DIA. - DIAMETER
DISC. - DISCONNECT
EJ - EXPANSION JOINT
GALV - GALVANIZED
J-BOX - JUNCTION BOX
NEC - NATIONAL ELECTRICAL CODE
RGS - RIGID GALVANIZED STEEL
SCH - SCHEDULE
TYP - TYPICAL
US - UNDERGROUND SECONDARY ELECTRIC
XFMR - TRANSFORMER



PROJECT LOCATION



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MAINTENANCE FACILITY
ELECTRICAL UPGRADE
DYERSVILLE, IOWA

SHEET TITLE
COVER SHEET

SCALE:
AS NOTED

DRAWN BY:
M.C., R.M.

APPROVED:
R.M.

REVISIONS:

DATE:
JULY 14, 2015

PROJECT NO.:
ME 1408

SHEET NO.:
CS

LPG PIPING NOTES

SUMMARY OF WORK: PROVIDE A FULLY FUNCTIONAL LPG FUEL PIPING SYSTEM FOR THE GENSET.

COORDINATE WITH GENSET SUPPLIER AND ENSURE PROPANE VAPOR IS DELIVERED AT THE RIGHT PRESSURE AND QUANTITY AS REQUIRED BY THE GENSET.

CODES
AT A MINIMUM, CONFORM TO THE FOLLOWING:
UNIFORM PLUMBING CODE (2012)
NATIONAL FUEL GAS CODE–NFPA 54
INTERNATIONAL FUEL GAS CODE (2012)

PRODUCTS
STEEL GAS PIPING:
STEEL GAS PIPING, ABOVE GROUND AS NOTED ON THE DRAWING: SCHEDULE 40 BLACK STEEL PIPE, ASTM A53, WITH ANSI/ASME B16.3 MALLEABLE IRON FITTINGS AND SCREWED JOINTS.

GAS PIPING UNIONS: BLACK MALLEABLE IRON, GROUND JOINT WITH BRASS SEAT, ANSI B16.39.

MEDIUM DENSITY POLYETHELENE (MDPE) GAS PIPING:
PROVIDE MDPE PIPING FOR UNDERGROUND PIPING AS NOTED ON THE DRAWING. PROVIDE YELLOW TRACER WIRE THROUGHOUT LENGTH.

VALVES
BALL VALVES: 200 PSI WOG @ 150 F, ALL BRASS OR BRONZE, STRAIGHT WAY PLUG, SCREWED, SQUARE HEAD.

PROVIDE VALVES WITH CSA LABEL.

MISCELLANEOUS MATERIALS

INCLUDE MISCELLANEOUS MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ENGINEER.

INSTALLATION IN GENERAL:
COMPLY WITH ALL APPLICABLE REQUIREMENTS OF NFPA 54, AND THE INTERNATIONAL FUEL GAS CODE
PROTECT PIPING FROM DIRT BY CAPPING ENDS UNTIL READY TO USE.
SUPPORT PIPING INDEPENDENTLY SO THAT WEIGHT OF PIPE WILL NOT BE SUPPORTED BY THE EQUIPMENT.

EXECUTION

SECURELY ANCHOR ALL EQUIPMENT, HANGERS, AND SIMILAR ITEMS IN PLACE. SUPPORT EACH ITEM INDEPENDENTLY FROM OTHER PIPES. DO NOT USE WIRE OR METAL STRAPS FOR HANGING OR STRAPPING PIPES.
PROVIDE UNION AND SHUT_OFF VALVES SUITABLY LOCATED TO FACILITATE MAINTENANCE AND REMOVAL OF EQUIPMENT AND APPARATUS.
SECURELY MOUNT REGULATORS (REFER TO SECTION 16190).

TESTING NATURAL GAS PIPING SYSTEM:
COMPLY WITH NFPA 54.

SUBMIT A TEST REPORT TO THE ENGINEER.

LIGHT FIXTURE SCHEDULE

TAG	FIXTURE TYPE	MANUFACTURER	MODEL	VOLTS	LAMPS	NOTES
LED1	EXTERIOR BUILDING MOUNTED LED	STONCO	LPW32–71BZPCB	120V	71W LED	1–2,4–5
LED2	GENERATOR ENCLOSURE LED	LUMINAIRE LED	SWP610–15W–3500K–120–277–BLK	120V	15W LED	4
P1	PARKING LOT LIGHTING POLE (25'–0")	KWI	SSP25–5.0–7–BRZ–DM10–BC	–	–	3–4

NOTES:
1. INCLUDE BUILT–IN PHOTOCELL & PHOTOCELL SWITCH.
2. HOUSING COLOR: DARK BRONZE.
3. INCLUDE BASE COVER, ANCHOR BOLTS, HANDHOLE, GROUNDING LUG, 12" MOUNTING ARMS, & ALL HARDWARE REQUIRED TO INSTALL THE SPECIFIED LED1 FIXTURE.
4. EQUIVALENT PRODUCTS FROM LITHONIA, DAYBRITE, & HUBBELL ARE APPROVED AS EQUALS.
5. INSTALL POWER CIRCUIT FROM FIXTURE IN EMT THROUGH EXTERIOR WALL AND DOWN INTERIOR WALL TO +2'–0" ABOVE GRADE THEN OUT THROUGH EXTERIOR WALL AND UNDERGROUND IN PVC TO NEW PANEL P1.

GAS REGULATOR SCHEDULE

TAG	SERVES	MANUFACTURER	PRESSURE		PIPE SIZE		1000 BTU/HR	FLOW RATE (CFH)	NOTES
			INLET	OUTLET	INLET	OUTLET			
GR–1	GENSET (AT LPG TANK)	(SEE NOTE 4)	(SEE NOTE 2)	10 PSI	1"	1"	1250	500	2–4
GR–2	GENSET (AT GENSET)	(SEE NOTE 4)	10 PSI	11" W.C.	1"	1"	1250	500	1,3–4

NOTES:
1. CONNECT REGULATOR TO LPG INLET OF GENERATOR.
2. TANK VAPOR PRESSURE: TYPICALLY 25–100 PSI.
3. PROVIDE A CSA APPROVED BALL GAS SHUTOFF VALVE AT EACH REGULATOR.
4. MAXITROL, FISHER, OR APPROVED EQUAL.

AUTOMATIC TRANSFER SWITCH SCHEDULE

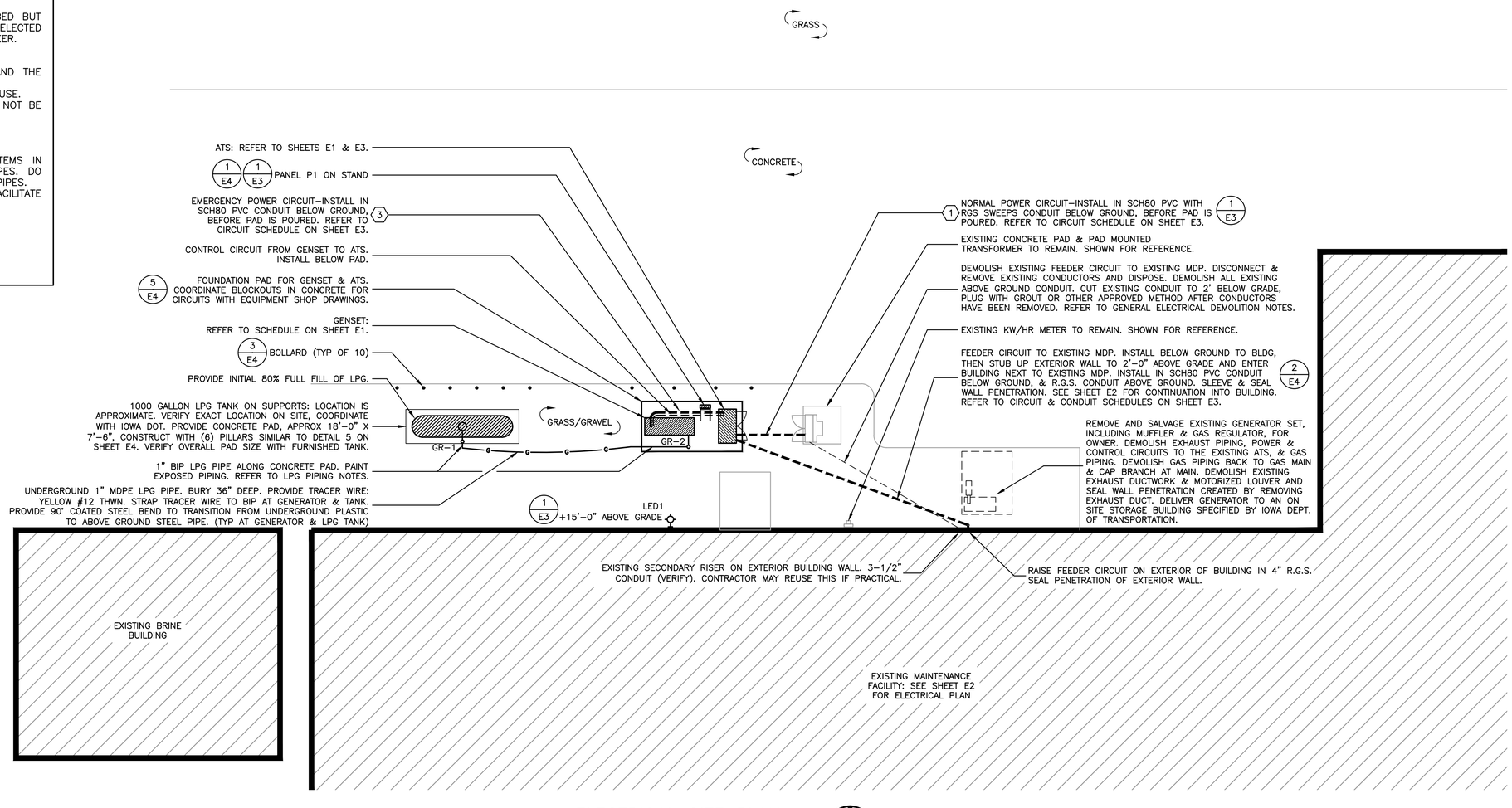
TAG	TYPE	MANUFACTURER	MODEL	RATINGS					ENCLOSURE RATING	NOTES
				VOLTS	POLES	AMPS	FREQ.	SCCR		
ATS	AUTOMATIC	ASCO	7000 SERIES	208	3	400	60 Hz	65kA	NEMA 4X	1–5

NOTES:
1. SERVICE ENTRANCE RATED.
2. INCLUDE OPEN TRANSITION MAINTENANCE BYPASS WITHIN ENCLOSURE.
3. REFER TO SECTION 16495 FOR ADDITIONAL REQUIREMENTS.
4. INCLUDE (1) 250A 3P DISTRIBUTION BREAKER FOR PANEL P1 & (1) 250A 3P DISTRIBUTION BREAKER FOR FUTURE EXPANSION.
5. AMP MODEL EQUIVALENT TO THE ASCO 7000 SERIES.

GENERATOR SET SCHEDULE

TAG	POWER RATING				NAMEPLATE RATING (kW)	FUEL	NOTES
	VOLTS	PHASE	AMPS	FREQ.			
GENSET	208/120	3	400	60 Hz	100	NATURAL GAS/LPG	1–3

NOTES:
1. ACCEPTABLE MANUFACTURERS: CATERPILLAR, KOHLER, GENERAC.
2. REFER TO SECTION 16355 FOR ADDITIONAL REQUIREMENTS.
3. GENSET WILL BE INITIALLY FUELED BY LPG ONLY, NATURAL GAS CAPABILITY IS FOR FUTURE USE.



ELECTRICAL SITE PLAN

SCALE: 1" = 10'–0" (APPROX)

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MAINTENANCE FACILITY
ELECTRICAL UPGRADE

DYERSVILLE, IOWA

SHEET TITLE
ELECTRICAL SITE PLAN

SCALE: AS NOTED

DRAWN BY: M.C., R.M.

APPROVED: R.M.

REVISIONS:

DATE: JULY 14, 2015

PROJECT NO.: ME 1408

SHEET NO.: E1

ELECTRICAL KEYED NOTES

1. DEMOLISH EXISTING LIGHT FIXTURE AND REPLACE WITH NEW FIXTURE IN SAME LOCATION (50 FIXTURES). FIXTURE IS FURNISHED BY OWNER AND ARE STORED ON SITE. PROVIDE FIXTURE WHIPS. REUSE EXISTING WIRING. INSPECT EXISTING WIRING FOR DEFECTS OR POTENTIAL SAFETY ISSUES. REPORT ANY ISSUES TO THE ENGINEER. VERIFY THAT THERE IS AN EQUIPMENT GROUNDING CONDUCTOR. SALVAGE EXISTING LIGHT FIXTURES FOR OWNER. DELIVER REMOVED FIXTURES TO AN ON SITE STORAGE BUILDING SPECIFIED BY IOWA DEPT. OF TRANSPORTATION.

2. DEMOLISH EXISTING LIGHT FIXTURE AND REPLACE WITH NEW WET LOCATION FIXTURE IN SAME LOCATION (10 FIXTURES). WET LOCATION FIXTURE IS FURNISHED BY OWNER. REUSE EXISTING WIRING. INSPECT EXISTING WIRING FOR DEFECTS OR POTENTIAL SAFETY ISSUES. REPORT ANY ISSUES TO THE ENGINEER. VERIFY THAT THERE IS AN EQUIPMENT GROUNDING CONDUCTOR. SALVAGE EXISTING LIGHT FIXTURES FOR OWNER. DELIVER REMOVED FIXTURES TO AN ON SITE STORAGE BUILDING SPECIFIED BY IOWA DEPT. OF TRANSPORTATION.

3. PROVIDE SUPPORTS FROM OVERHEAD STRUCTURE FOR NEW FIXTURES. SUPPORTS INCLUDE GALV. STEEL STRUT, THREADED HANGAR RODS, BEAM CLAMPS, FASTENERS, AND MISC. MATERIALS REQUIRED TO SUPPORT THE NEW FIXTURES. AT A MINIMUM, SUPPORT EACH NEW FIXTURE WITH (2) 3/8" DIA. THREADED STEEL ROD. PROVIDE WASHERS BEHIND ALL NUTS. PROVIDE NEW BLANK COVER PLATES FOR EXISTING JUNCTION BOXES IF REQUIRED.

4. REUSE EXISTING SWITCHES AND ASSOCIATED CIRCUITING. INSPECT EXISTING SWITCHES & WIRING FOR DEFECTS OR POTENTIAL SAFETY ISSUES. REPORT ANY ISSUES TO THE ENGINEER. VERIFY THAT THERE IS AN EQUIPMENT GROUNDING CONDUCTOR.

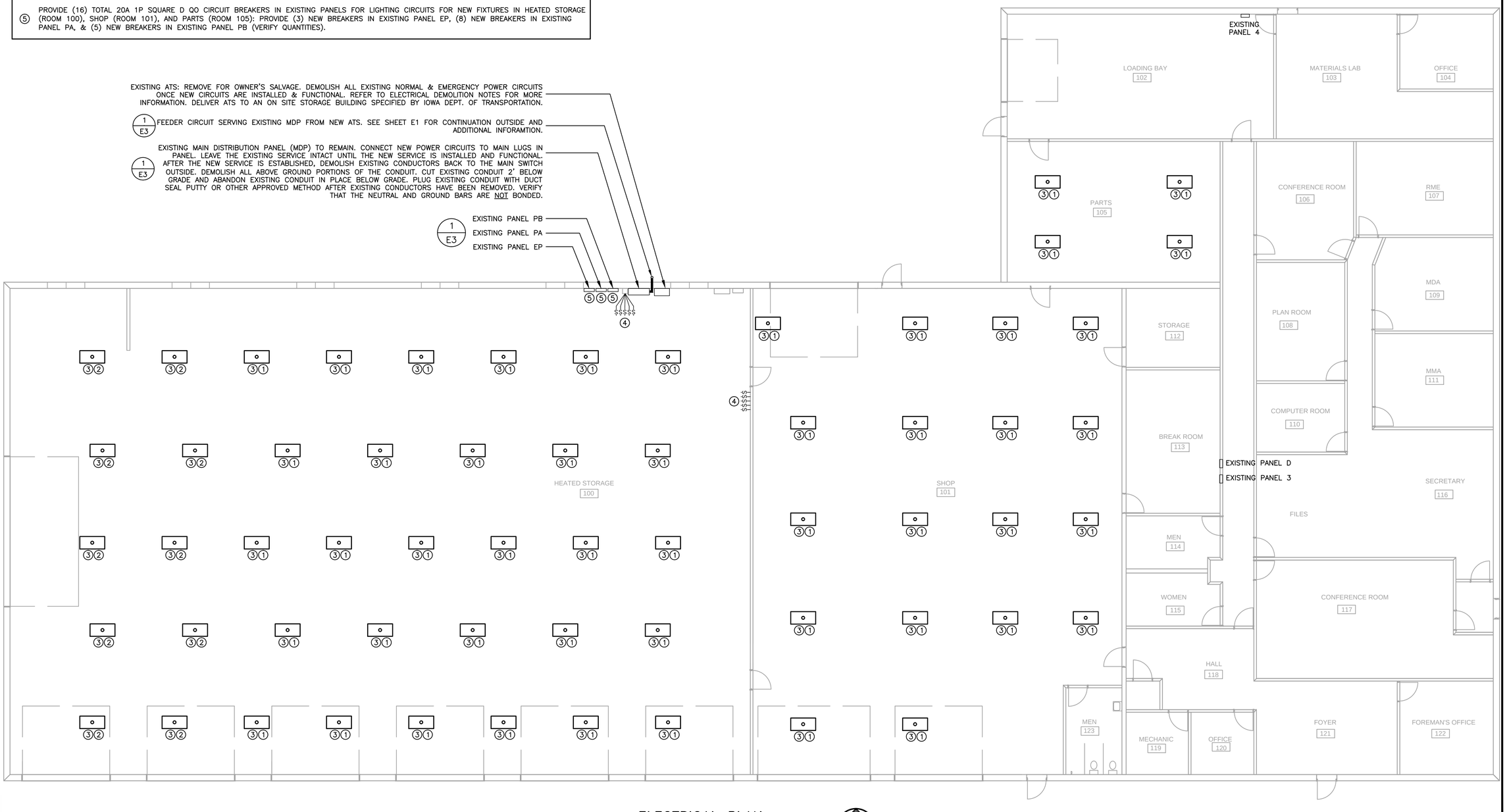
5. PROVIDE (16) TOTAL 20A 1P SQUARE D QO CIRCUIT BREAKERS IN EXISTING PANELS FOR LIGHTING CIRCUITS FOR NEW FIXTURES IN HEATED STORAGE (ROOM 100), SHOP (ROOM 101), AND PARTS (ROOM 105): PROVIDE (3) NEW BREAKERS IN EXISTING PANEL EP, (8) NEW BREAKERS IN EXISTING PANEL PA, & (5) NEW BREAKERS IN EXISTING PANEL PB (VERIFY QUANTITIES).

EXISTING ATS: REMOVE FOR OWNER'S SALVAGE. DEMOLISH ALL EXISTING NORMAL & EMERGENCY POWER CIRCUITS ONCE NEW CIRCUITS ARE INSTALLED & FUNCTIONAL. REFER TO ELECTRICAL DEMOLITION NOTES FOR MORE INFORMATION. DELIVER ATS TO AN ON SITE STORAGE BUILDING SPECIFIED BY IOWA DEPT. OF TRANSPORTATION.

(1/E3) FEEDER CIRCUIT SERVING EXISTING MDP FROM NEW ATS. SEE SHEET E1 FOR CONTINUATION OUTSIDE AND ADDITIONAL INFORAMTION.

(1/E3) EXISTING MAIN DISTRIBUTION PANEL (MDP) TO REMAIN. CONNECT NEW POWER CIRCUITS TO MAIN LUGS IN PANEL. LEAVE THE EXISTING SERVICE INTACT UNTIL THE NEW SERVICE IS INSTALLED AND FUNCTIONAL. AFTER THE NEW SERVICE IS ESTABLISHED, DEMOLISH EXISTING CONDUCTORS BACK TO THE MAIN SWITCH OUTSIDE. DEMOLISH ALL ABOVE GROUND PORTIONS OF THE CONDUIT. CUT EXISTING CONDUIT 2' BELOW GRADE AND ABANDON EXISTING CONDUIT IN PLACE BELOW GRADE. PLUG EXISTING CONDUIT WITH DUCT SEAL PUTTY OR OTHER APPROVED METHOD AFTER EXISTING CONDUCTORS HAVE BEEN REMOVED. VERIFY THAT THE NEUTRAL AND GROUND BARS ARE NOT BONDED.

(1/E3) EXISTING PANEL PB
EXISTING PANEL PA
EXISTING PANEL EP



ELECTRICAL PLAN

SCALE: 1/8" = 1' – 0"

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MAINTENANCE FACILITY
ELECTRICAL UPGRADE
DYERSVILLE, IOWA

SHEET TITLE
ELECTRICAL PLAN

SCALE:
AS NOTED

DRAWN BY:
M.C., R.M.

APPROVED:
R.M.

REVISIONS:

DATE:
JULY 14, 2015

PROJECT NO.:
ME 1408

SHEET NO.:
E2

ELECTRIC DISTRIBUTION NOTES

1. FURNISH & INSTALL CIRCUIT BREAKERS AS SHOWN ON PANEL SCHEDULE (TYP).
2. APPLY ANTIOXIDANT PASTE TO ALL CONDUCTORS WHERE THEY CONNECT TO LUGS. TORQUE ALL CONNECTIONS TO VALUES RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
3. GENERATOR FRAME MOUNTED CIRCUIT BREAKER: INSTALL CB SO IT IS ACCESSIBLE FROM GROUND AT HEIGHT NO GREATER THAN 6'-0" ABOVE GROUND.
4. ROUTE GROUNDING CONDUCTORS AS SHORT & DIRECT AS POSSIBLE. MINIMIZE BENDS. MAKE REQ'D BENDS W/ LARGE RADIUS. STRAP CONDUIT TO WALL W/ PVC STRAPS. INSTALL GROUNDING CONDUCTOR IN CONDUIT EVERYWHERE ABOVE GRADE AND BELOW GRADE TO BURIAL DEPTH IN 1" SCH80 PVC.
5. PROVIDE PENETRATION OF EXTERIOR WALL WITH SCH. 40 GALV. STEEL SLEEVE. EXTEND CONDUIT THROUGH EXISTING WALL. FILL AREA BETWEEN SLEEVE AND CONDUIT WITH SPRAY FOAM. APPLY NEAT FILLET OF URETHANE BASED SEALANT AROUND PERIMETER ON BOTH SIDES OF WALL.
6. PROVIDE A 4" RIGID GALVANIZED CONDUIT EXPANSION JOINT FROM AN APPROVED MANUFACTURER.
7. PROVIDE "LB" FITTING.
8. CADWELD UFER GROUNDING CONDUCTOR TO REBAR IN CONCRETE PAD.
9. EXISTING KW/HR METER BY ALLIANT UTILITY TO REMAIN. SHOWN FOR REFERENCE.
10. VERIFY THAT THE FOLLOWING GROUNDING CONNECTIONS EXIST AT THE EXISTING MDP. REPORT ANY THAT DO NOT EXIST OR ANY UNSAFE CONDITIONS TO THE ENGINEER:
    - –MDP GROUNDING BAR BONDED TO COLD WATER PIPE AT WATER SERVICE ENTRANCE.
    - –JUMPER ACROSS WATER METER AT WATER SERVICE ENTRANCE.
    - –GROUNDING BAR BONDED TO BUILDING STEEL IF APPLICABLE.
    - –VERIFY THAT THE NEUTRAL AND GROUND BARS ARE NOT BONDED. REMOVE BOND IF IT DOES EXIST.

    AFTER THE NEW SERVICE IS ESTABLISHED, DEMOLISH EXISTING CONDUCTORS BACK TO THE TRANSFORMER. DEMOLISH ALL ABOVE GROUND PORTIONS OF THE CONDUIT. CUT EXISTING CONDUIT 2' BELOW GRADE AND ABANDON EXISTING CONDUIT IN PLACE BELOW GRADE. PLUG EXISTING CONDUIT WITH DUCT SEAL PUTTY OR OTHER APPROVED METHOD AFTER EXISTING CONDUCTORS HAVE BEEN REMOVED. ADD GROUNDING LUG IN MDP. PROVIDE NEW GROUNDING CONDUCTOR AND CONNECT TO NEW ATS & GENERATOR SET GROUNDING LUGS.
11. PROVIDE (1) SPARE 250A 3P CIRCUIT BREAKER IN ATS FOR FUTURE EXPANSION.
12. BOND NEUTRAL AND GROUND BARS TOGETHER AT ONE POINT ONLY.
13. PROVIDE 120V 20A INDUSTRIAL GRADE QUAD GFCI RECEPTACLE IN A 4"x4"x2-1/8" STEEL BOX, MOUNTED WITHIN THE GENSET WEATHER ENCLOSURE FOR BATTERY CHARGER & BATTERY HEATER.
14. VERIFY ENGINE HEATER WATTAGE WITH GENERATOR MANUFACTURER. PROVIDE EITHER A HARDWIRED CONNECTION OR 20A GFCI RECEPTACLE AS REQUIRED BY GENERATOR MANUFACTURER.
15. PROVIDE (1) 120V 20A SWITCH IN A 4"x4"x2-1/8" STEEL BOX FOR LED2'S WITHIN GENERATOR. MOUNT SO SWITCH IS EASILY ACCESSIBLE ON SIDE WALL OF GENSET ENCLOSURE. CIRCUIT TO 20A CIRCUIT BREAKER IN PANEL P1.
16. PROVIDE (1) 120V 20A SWITCH IN A 4"x4"x2-1/8" STEEL BOX FOR LED2'S WITHIN GENERATOR. MOUNT SO SWITCH IS EASILY ACCESSIBLE ON SIDE WALL OF GENSET ENCLOSURE. CIRCUIT TO 20A CIRCUIT BREAKER IN PANEL P1.
17. INSTALL POWER CIRCUIT FROM LIGHT FIXTURE (LED1) IN EMT THROUGH EXTERIOR WALL AND DOWN INTERIOR WALL TO +2'-0" ABOVE GRADE THEN OUT THROUGH EXTERIOR WALL AND UNDERGROUND IN PVC TO NEW PANEL P1.

CIRCUIT SCHEDULE

TAG	CIRCUIT SERVES	# OF SETS	CONDUCTOR INFORMATION	CONDUIT SIZE
1	ATS NORMAL POWER	(1)	(4) 600 kcmil THWN-2	4"
2	EXISTING MDP	(1)	(4) 600 kcmil THWN-2 + (1) #3 AWG THWN-2 E.G.C.	4"
3	ATS EMERGENCY POWER	(1)	(4) 600 kcmil THWN-2 + (1) #3 AWG THWN-2 E.G.C.	4"
4	PANEL P1	(1)	(4) 250 kcmil THWN-2 + (1) #4 AWG THWN-2 E.G.C.	3"
5	GENERATOR RECEPTACLE (GENERAL MAINTENANCE)	(1)	(2) #10 AWG THWN-2 + (1) #12 AWG THWN-2 E.G.C.	1-1/2"
6	GENERATOR RECEPTACLE (ENGINE HEATER)	(1)	(2) #10 AWG THWN-2 + (1) #12 AWG THWN-2 E.G.C.	WITH ABOVE
7	GENERATOR RECEPTACLE (BATTERY CHARGER & HEATER)	(1)	(2) #10 AWG THWN-2 + (1) #12 AWG THWN-2 E.G.C.	WITH ABOVE
8	EXISTING EMERGENCY PANEL "EP"	(1)	(4) #3 AWG THWN-2 + (1) #8 AWG THWN-2 E.G.C.	1-1/2"
9	GROUNDING CONDUCTORS	(1)	(1) #2/0 AWG THWN-2 E.G.C.	(4)

CONDUIT SCHEDULE

REFER TO SECTION 16110 FOR FITTINGS & ADDITIONAL REQUIREMENTS.

PROVIDE CONDUIT IN THE SIZES SHOWN ON THE CIRCUIT SCHEDULE & OF THE TYPES AS FOLLOWS (UNLESS NOTED OTHERWISE ON DRAWINGS):

BELOW GROUND: SCH80 RIGID PVC

ABOVE GROUND, OUTSIDE: SCH40 RIGID GALVANIZED STEEL

SWEEPS OR ELBOWS, OUTSIDE: SCH40 RIGID GALVANIZED STEEL

GROUNDING CONDUCTOR, ABOVE GROUND: SCH80 RIGID PVC

ABOVE GROUND, WITHIN THE BUILDING: EMT.

SPECIAL CONDITIONS

WORK INVOLVING SIGNIFICANT POWER DISRUPTIONS MUST BE PREFORMED WITHOUT MAJOR DISRUPTION TO THE OWNER'S NORMAL ACTIVITIES. REFER TO SPEC SECTION 16010-1.

EXISTING WIRING

IF EXISTING WIRING IS CALLED OUT TO BE REUSED, INSPECT CONDITION AND CURRENT RATING OF WIRE TO DETERMINE IF IT IS SAFE TO REUSE. REPORT ANY UNSATISFACTORY OR UNSAFE CONDITIONS TO THE ENGINEER.

EQUIPMENT LABELING

PROVIDE LABELING ON ALL EQUIPMENT AS REQUIRED BY THE NEC AND SPECIFICATION SECTION 16195.

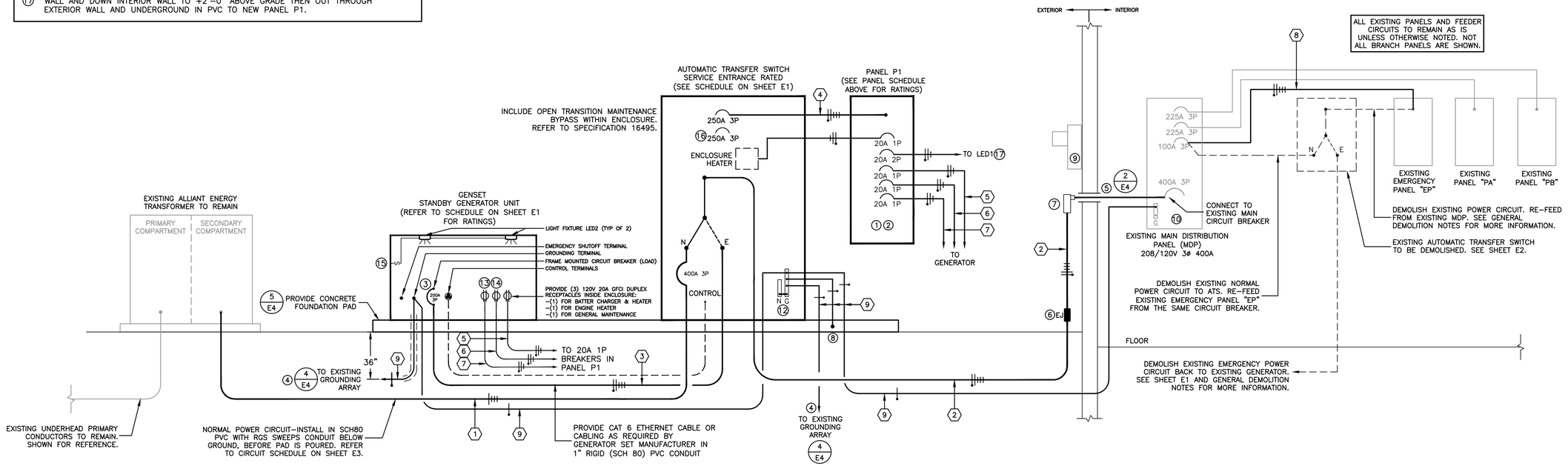
PANEL P1

LOCATION: EQUIPMENT PAD
ENCLOSURE TYPE: NEMA 4X
INSTALLATION: STAND

VOLTS: 208/120V 3P 4W+G
MAINS RATING: 250A
NEUTRAL: 100%

AIC RATING: 10,000
MAIN LUGS ONLY

CKT. NO.	CIRCUIT BREAKER	LOAD kVA	CIRCUIT DESCRIPTION	CKT. NO.	CIRCUIT BREAKER	LOAD kVA	CIRCUIT DESCRIPTION
1	20A/1P	–	GENSET RECEPTACLE	2	20A/1P	–	LED1
3	20A/1P	–	GENSET RECEPTACLE	4	20A/1P	–	ATS ENCLOSURE HEATER
5	20A/1P	–	GENSET RECEPTACLE	6	20A/1P	–	SPARE
7	20A/1P	–	GENSET LED2 FIXTURES	8	20A/1P	–	SPARE
9	20A/1P	–	SPARE	10	20A/1P	–	SPARE
11	20A/1P	–	SPARE	12	20A/1P	–	SPARE
13	20A/1P	–	SPACE	14	20A/1P	–	SPACE
15	20A/1P	–	SPACE	16	20A/1P	–	SPACE
17	20A/1P	–	SPACE	18	20A/1P	–	SPACE
19	20A/1P	–	SPACE	20	20A/1P	–	SPACE
21	20A/1P	–	SPACE	22	20A/1P	–	SPACE
23	20A/1P	–	SPACE	24	20A/1P	–	SPACE
25	20A/1P	–	SPACE	26	20A/1P	–	SPACE
27	20A/1P	–	SPACE	28	20A/1P	–	SPACE
29	20A/1P	–	SPACE	30	20A/1P	–	SPACE



1 ELECTRICAL DISTRIBUTION DIAGRAM
NOT TO SCALE

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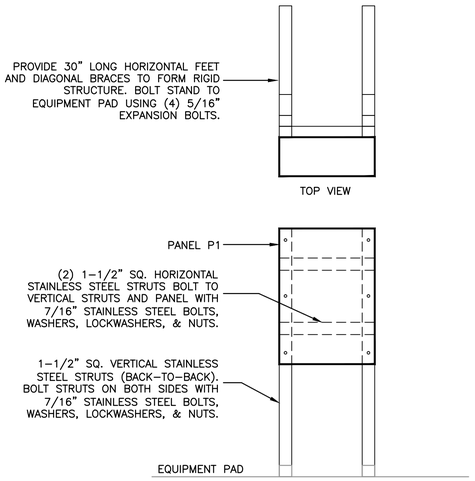
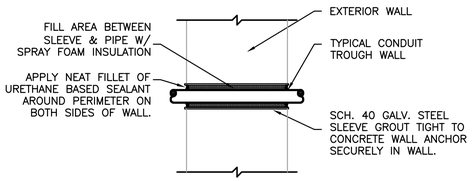
MAINTENANCE FACILITY
ELECTRICAL UPGRADE
DYERSVILLE, IOWA

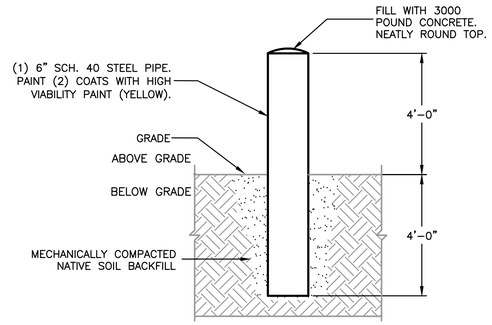
SHEET TITLE: ELECTRICAL DETAILS
SCALE: AS NOTED
DRAWN BY: M.C., R.M.
APPROVED: R.M.
REVISIONS:
DATE: JULY 14, 2015
PROJECT NO.: ME 1408
SHEET NO.: E3



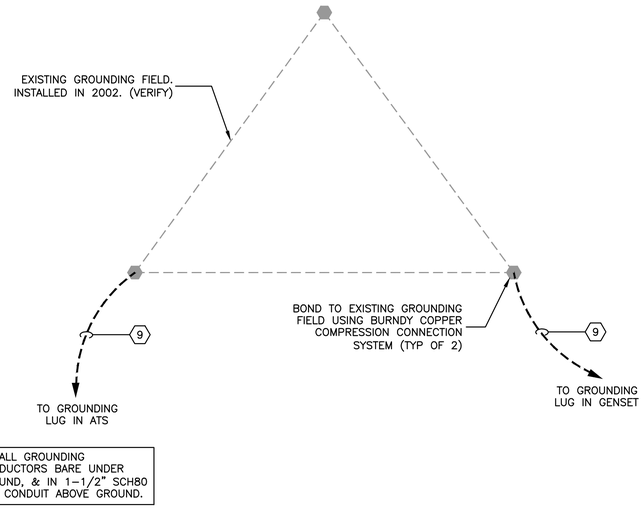
1 PANEL P1 STAND DETAIL
NOT TO SCALE



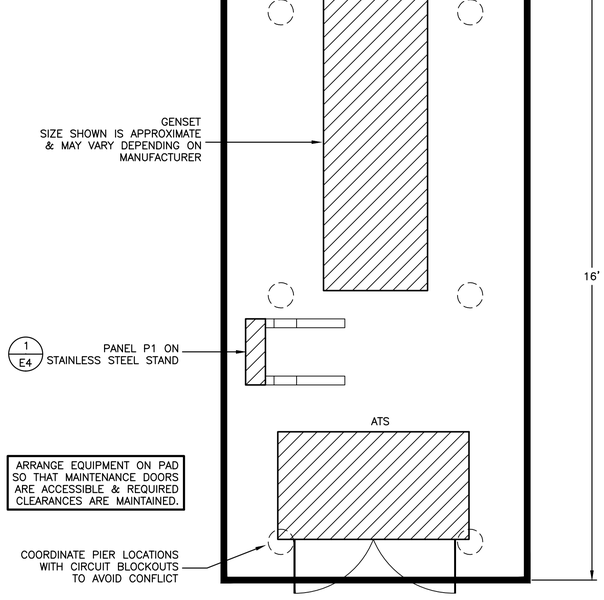
2 SLEEVE & SEAL DETAIL – EXTERIOR
NOT TO SCALE



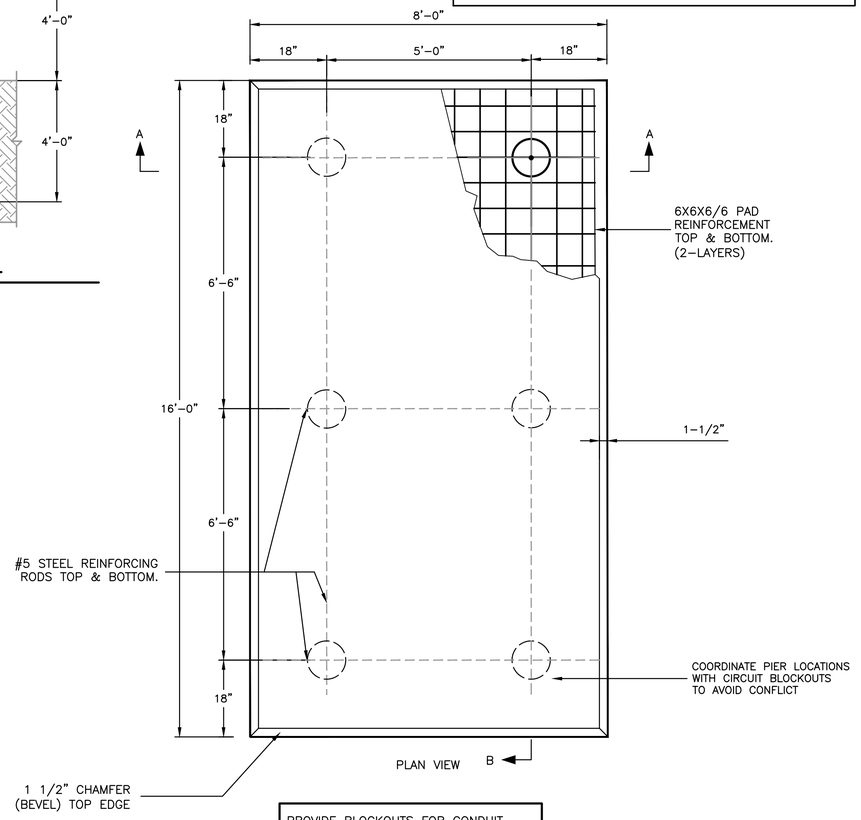
3 BALLARD DETAIL
NOT TO SCALE



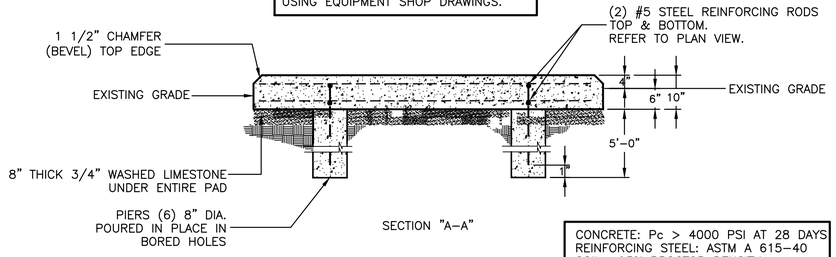
4 GROUNDING ELECTRODE SYSTEM DETAIL
NOT TO SCALE



5 ATS & GENERATOR SET CONCRETE PAD DETAIL
NOT TO SCALE



PROVIDE BLOCKOUTS FOR CONDUIT ENTRY AT EQUIPMENT AS REQUIRED (NOT SHOWN ON DETAIL). COORDINATE LOCATION OF BLOCKOUTS USING EQUIPMENT SHOP DRAWINGS.



CONCRETE: Pc > 4000 PSI AT 28 DAYS
REINFORCING STEEL: ASTM A 615-40
SOIL >95% PROCTOR DENSITY

EQUIPMENT FOUNDATION SUMMARY

CUT EXISTING SOD & SAVE FOR RE-USE. KEEP MOIST. EXCAVATE APPROX. 3 FT. & SAVE SOIL FOR RE-GRADING.

BORE (6) 8"D HOLES 6 FT. BELOW GRADE. PUT 3/4" WASHED LIMESTONE 6" DEEP IN BOTTOM OF EACH HOLE.

PROVIDE BLOCKOUTS FOR CONDUITS ENTERING EQUIPMENT.

INSTALL BELOW-PAD CONDUITS TO EQUIPMENT AS SHOWN ON THE DRAWINGS.

PROVIDE 8" BED OF 3/4" WASHED LIMESTONE IN BOTTOM OF PAD EXCAVATION.

PROVIDE REINFORCED CONCRETE FOUNDATION AS SHOWN BELOW. OVERALL SIZE SHOWN IS APPROXIMATE. COORDINATE EXACT OVERALL SIZE WITH EQUIPMENT SHOP DRAWINGS.

AFTER EQUIPMENT HAS BEINSTALLED, FINISH GRADE WITH SLIGHT SLOPE UP TO 4" BELOW TOP OF SLAB. SET REMOVED SOD TO COVER EXPOSED DIRT & WATER.

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MAINTENANCE FACILITY
ELECTRICAL UPGRADE
DYERSVILLE, IOWA

SHEET TITLE
ELECTRICAL DETAILS

SCALE: AS NOTED

DRAWN BY: M.C., R.M.

APPROVED: R.M.

REVISIONS:

DATE: JULY 14, 2015

PROJECT NO.: ME 1408

SHEET NO.: E4